MEMORANDUM

TO: **CW4CB Project Management Team**

FROM: **Kristin Kerr and Jon Konnan, EOA, Inc.**

DATE: **September 13, 2010**

SUBJECT: **Clean Watersheds for a Clean Bay (CW4CB) Project Status**

1.0 INTRODUCTION

This memorandum presents the status of Clean Watersheds for a Clean Bay (CW4CB), a new project funded by a grant to the Bay Area Stormwater Management Agency Association (BASMAA) from the United States Environmental Protection Agency (EPA).[1] It was prepared to address the 2010 reporting requirements for portions of Provisions C.11 and C.12 (described below) of the regional stormwater NPDES permit adopted October 14, 2009 by the San Francisco Bay Area Regional Water Quality Control Board (Regional Water Board), which is commonly referred to as the "Municipal Regional Permit" (MRP).[2]

The CW4CB project is a partnership of Bay Area municipalities and countywide municipal stormwater management programs. The overarching project objective is to implement priority actions called for by the San Francisco Bay PCBs and mercury Total Maximum Daily Load (TMDL) water quality restoration programs[3] including developing and pilot-testing a variety of methods to potentially reduce urban runoff loading of PCBs and mercury to the Bay. The project work plan (BASMAA 2010) submitted to EPA on September 23, 2009 (the final revised version is dated April 19, 2010) describes the project's principal tasks:

- Selecting for pilot investigations five Bay Area region watersheds with relatively high levels of PCBs[4] in sediments collected from roadway and stormwater drainage infrastructure and other desirable attributes;
- Identifying PCB and mercury source areas within the pilot watersheds and referring these sites to regulatory agencies for cleanup and abatement;
- Developing and pilot-testing methods to enhance removal of sediment with PCBs and mercury, mainly during existing municipal street and storm drain system operation and maintenance activities in the five pilot watersheds;
- Retrofitting eight to ten urban runoff treatment facilities into existing infrastructure in the Bay Area region to remove PCBs and mercury; and

[1]Funding is provided through EPA's San Francisco Bay Water Quality Improvement Fund.
[2]National Pollutant Discharge Elimination System (NPDES) Permit No. CAS612008, Order R2-2009-0074.
[3]The MRP implements the TMDL actions related to stormwater runoff.
[4]Per the MRP, "Reducing loads of PCBs is the main pilot location selection factor...and reducing loads of mercury is a secondary criterion."

- Facilitating development and implementation of a Bay Area regional exposure reduction program that focuses on educating the public about the health risks of consuming certain species of Bay fish that contain relatively high levels of PCBs and mercury.

The successful project outcome will contribute to developing a comprehensive regional strategy for reducing PCB and mercury loads in urban runoff, based on the cost-effectiveness of a range of pollutant control strategies, including pollution prevention, site remediations, enhanced sediment management, stormwater treatment retrofits, and diversion of stormwater to existing publicly owned treatment works (POTWs).[5] The knowledge and experience gained and the lessons learned during the CW4CB project will inform similar efforts by others in the Bay Area and elsewhere in California and the United States.

The anticipated project period is four years, beginning July 1, 2010. BASMAA is receiving $5.0 million in funding from the EPA toward the $6.84 million total project cost. The remaining $1.84M (about 27% of the total project cost) is matching funding contribution from BASMAA and six of the Bay Area countywide stormwater management programs. In addition, in-kind assistance from participating city staff will leverage the project effort.

A project management team consisting of BASMAA's executive director and representatives from several BASMAA countywide programs and Bay Area cities is providing project oversight and coordination. The team recently began meeting regularly on the second Wednesday of each month.

CW4CB is also convening a Technical Advisory Committee (TAC) comprised of local and national experts. The TAC will help optimize the scientific and technical soundness, integrity, and objectivity of the project. It will be comprised of Dr. Tom Mumley (Assistant Executive Officer, Regional Water Board), Dr. Lester McKee (Director of the Watershed Program, San Francisco Estuary Institute), and other appropriate technical experts from the Bay Area and elsewhere in the United States. CW4CB project management team members have conducted initial discussions with the existing two TAC members regarding finding additional members and have prepared a draft scoping document and a list of questions to ask when interviewing candidate additional members. Per the initial discussions, the project will seek to find TAC members with experience related to implementation of stormwater controls targeting particulate-bound pollutants in highly urbanized built-out industrial areas where available land is often sparse. Per Table 3 of the CW4CB project work plan, the schedule for initially convening the TAC is during the first quarter of the project (see Task 1).

The project work plan includes seven major tasks, several of which are intended to directly assist Permittee compliance with specific MRP provisions. These tasks and the corresponding provisions are as follows:

- CW4CB Tasks 2 and 3 (MRP Provisions C.11/12.c - Pilot Projects to Investigate and Abate Mercury/PCB Sources).
- CW4CB Task 4 (MRP Provisions C.11/12.d - Pilot Projects to Evaluate and Enhance Municipal Sediment Removal and Management Practices).

[5]Pollution prevention and stormwater diversion to POTW strategies are being developed and pilot-tested separately from CW4CB.

- CW4CB Task 5 (MRP Provisions C.11/12.e - Pilot Projects to Evaluate On-Site Stormwater Treatment via Retrofit).
- CW4CB Task 6 (MRP Provisions C.11/12.i - Development of a Risk Reduction Program Implemented throughout the Region).

The following sections in this memorandum describe progress to-date on each of the above CW4CB tasks and corresponding MRP provisions and the schedule for moving forward. It should be noted that although CW4CB's conceptual planning and discussion began in early 2010, the actual project start date was July 1, 2010.[6]

2.0 PILOT PROJECTS TO INVESTIGATE AND ABATE MERCURY/PCB SOURCES

Provisions C.11/12.c. of the MRP require that Permittees work collaboratively to review pertinent existing data and identify five Bay Area watersheds that contain relatively high levels of PCBs and mercury (CW4CB Task 2) and conduct pilot projects to investigate and abate these pollutants (CW4CB Task 3). The CW4CB project management team is developing selection criteria and is currently working with Permittees towards selecting the five pilot watersheds by reviewing and evaluating relevant existing data.

Table 1 summarizes the proposed criteria that will inform selection of the five watersheds and the associated existing data sources. Most of these data were originally compiled and made available by the Regional Stormwater Monitoring and Urban BMP Evaluation Project conducted by the San Francisco Estuary Institute (SFEI) and referred to as the "SFEI Proposition 13 Study." The study investigated options for better managing mercury and PCBs in urban stormwater and was conducted in collaboration with BASMAA and the Regional Water Board. It was funded through a grant from the State of California Proposition 13 stormwater non-point-source program. SFEI recently completed the study and is currently updating a web site that will make the project data and results readily available.

The CW4CB project management team is currently working with SFEI to perform a GIS analysis of the SFEI Proposition 13 Study data to inform pilot watershed selection. The available data types include: watershed boundaries; spatial (including clustering) and temporal aspects of concentrations of PCBs and mercury in sediments; potential pollutant source sites (e.g., pollutant spill sites, PG&E facilities,[7] transformers with PCBs registered with the EPA, auto dismantlers, and historic railroads); historic land use; and pump station locations.

MRP Provisions C.11/12.d. require that Permittees work collaboratively to develop and pilot-test methods to enhance removal of sediment with PCBs and mercury during existing municipal street and storm drain system operation and maintenance activities. Permittees are required to conduct this pilot work in the five pilot watersheds selected for Provisions C.11/12.c. Thus the pilot watersheds will be located in areas where such municipal operation and maintenance activities are conducted routinely.

[6]The project started significantly later than originally anticipated. EPA's original Request for Proposal included an anticipated award date of February 2010. However, despite EPA's and BASMAA's best efforts to expedite the process, EPA was not able to provide BASMAA with a proposed assistance agreement until June 2010, resulting in the project start date of July 1, 2010. Thus the project is currently at an early stage.

[7]CW4CB currently does not have permission to use PG&E facility data but is working with Regional Water Board staff and SFEI to obtain that permission.

Table 1. Summary of Proposed Criteria to Inform Pilot Watershed Selection and Associated Data Sources

Category	Criterion	Data Sources
Benefits - Potential Pollutant Load Reductions	Are there relatively high levels of PCBs (and secondarily mercury) in sediments collected from roadway and stormwater drainage infrastructure in the watershed?	SFEI Proposition 13 Study compilation of sediment chemisty data.
	Are there other indicators of potential sources of PCBs in the watershed?	• SFEI Proposition 13 Study "hot spot" GIS layer. • SFEI Proposition 13 Study GIS land use analysis using ABAG data. • SFEI Proposition 13 Study PG&E facility GIS layer.[1] • SFEI Proposition 13 Study auto dismantler GIS layer. • SFEI Proposition 13 Study railroad GIS layer. • EPA Transformer Database (GIS layer created by SFEI).
Other Desirable Watershed Attributes	Is the watershed's size (i.e., area in square kilometers) within an acceptable range for the pilot study work?	SFEI Proposition 13 Study Bay Area watershed GIS layer.
	Is there a pump station at the bottom of the watershed?	SFEI Proposition 13 Study Bay Area pump station GIS layer.
	Are municipal street and storm drain system operation and maintenance activities conducted routinely in the watershed?	CW4CB project management team knowledge, municipal staff interviews.
Regional Context	Will pilot work in this watershed fit into the broader regional context of pilot-testing a range of pollutant control strategies, including pollution prevention, site remediations, enhanced sediment management, stormwater treatment retrofits, and diversion of stormwater to existing POTWs?	CW4CB project management team knowledge.
Barriers and Opportunities	Are there institutional, regulatory, political, technical, and/or organizational barriers to conducting pilot work in the watershed that cannot be easily addressed?	CW4CB project management team knowledge, municipal staff interviews.
	Have previous pertinent studies been conducted in the watershed?	CW4CB project management team knowledge, municipal staff interviews, project reports or other data.

[1]CW4CB currently does not have permission to use PG&E facility data but is working with Regional Water Board staff and SFEI to obtain that permission.

The CW4CB project management team and municipal staff will also determine whether there are institutional, regulatory, political, technical, and/or organizational barriers associated with a potential pilot watershed. In addition, an important consideration during the selection process will be whether pilot work in a proposed watershed would fit into the broader regional context of pilot-testing a range of pollutant control strategies, including pollution prevention, site remediations, enhanced sediment management, stormwater treatment retrofits, and diversion of stormwater to existing POTWs.

The CW4CB project work plan schedule calls for completing the pilot watershed selection process by the end of the first quarter of the project (September 30, 2010). It is anticipated that most or all of the watersheds will be selected by this date. After the five pilot watersheds are selected, CW4CB Task 3 will identify PCB and mercury source areas within the project watersheds and refer these sites to regulatory agencies for cleanup and abatement. Table 3 of the CW4CB work plan includes the schedule for implementation of this effort.

3.0 PILOT PROJECTS TO EVALUATE AND ENHANCE MUNICIPAL SEDIMENT REMOVAL AND MANAGEMENT PRACTICES

As noted previously, MRP Provisions C.11/12.d. require that Permittees work collaboratively to develop and pilot-test methods to enhance removal of sediment with PCBs and mercury, mainly during existing municipal street and storm drain system operation and maintenance activities. CW4CB Task 4 will implement this requirement. Permittees are required to conduct this pilot work in the five pilot watersheds selected for Provisions C.11/12.c. (CW4CB Tasks 2 and 3). The evaluation will include typical routine municipal operation and maintenance practices such as street sweeping, catch basin cleaning, and stormwater conveyance system cleaning, and will also include consideration of street flushing and routing the wash water to a sanitary sewer. Evaluation of existing information on high-efficiency street sweepers is also a specific C.11/12.d. requirement. As a first step, CW4CB has recently initiated a review of existing literature and other information relevant to these evaluations. Table 3 of the CW4CB work plan includes the schedule for implementation of this effort (see Task 4).

4.0 PILOT PROJECTS TO EVALUATE ON-SITE STORMWATER TREATMENT VIA RETROFIT

Provisions C.11/12.e. require that Permittees retrofit PCB and mercury treatment systems into existing storm drainage infrastructure at 10 locations throughout the Permittees' jurisdictions and evaluate effectiveness. CW4CB Task 5 will implement this requirement. It is anticipated that some but not all of the retrofits will be sited within the five pilot watersheds identified by CW4CB Task 2. Permittees are required to install at least one retrofit in each of five major Bay Area counties covered by the MRP (Santa Clara, San Mateo, Alameda, Contra Costa, and Solano) and report on candidate locations with types of treatment retrofit for each location in the September 2011 Annual Report. This effort is at an early stage and has consisted to-date of initial conceptual discussions at the project management team meetings. The project management team is also working with EPA to better define procurement rules in relation to retaining a consultant in the near future to perform an initial conceptual screening of retrofits potentially applicable to this project. Table 3 of the CW4CB work plan includes the schedule for implementation (see Task 5).

5.0 DEVELOPMENT OF A RISK REDUCTION PROGRAM IMPLEMENTED THROUGHOUT THE REGION

Provision C.11/12.i. requires that Permittees implement a regional program of risk communication activities to raise public awareness of fish contamination issues in San Francisco Bay and to encourage fish-consuming populations to reduce their exposure to pollutants in contaminated fish. CW4CB Task 6 will implement this requirement. The project work plan (BASMAA 2010) describes how this effort will be accomplished and includes four general subtasks:

- Sub-task 1. Convene a risk reduction stakeholder advisory group.
- Sub-task 2. Develop a broad risk communication strategy.
- Sub-task 3. Award and oversee implementation of mini-grants.
- Sub-task 4. Conduct evaluation activities.

Table 3 of the CW4CB work plan includes the schedule (see Task 6). It should be noted that BASMAA developed the work plan tasks and schedule in coordination with a Bay Area risk reduction work group that includes representatives from BASMAA, the California Department of Public Health, Bay Area Clean Water Agencies (BACWA), and Regional Water Board staff. Task 6 is being funded through CW4CB, potentially with additional funding from other dischargers to the Bay that have similar NPDES permit requirements, including BACWA and industrial dischargers. The work group held scoping meetings on December 1, 2009 and January 26, 2010 and also had many telephone and e-mail communications during early 2010 related to task and schedule development.

6.0 REFERENCES

BASMAA 2010. *Clean Watersheds for a Clean Bay - Implementing the San Francisco Bay PCBs and Mercury TMDLs with a Focus on Urban Runoff.* Prepared by the Bay Area Stormwater Management Agencies Association (BASMAA) for USEPA. September 23, 2009 (Revised April 19, 2010).